SEEKING OR ENCOUNTERING NEWS ON THE WEB:
THE ROLE OF NEED FOR COGNITION AND NEED TO EVALUATE

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ABSTRACT

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Previous literature has dealt with news consumption patterns on the web, but not many attempts have done to clarify individual differences by focusing on a role of personality variables. This study suggests that high need for cognition will lead digital news consumers to actively seek out news websites to get political information, whereas low need for cognition will lead them to passively encounter political news on social media. The results of the online survey indicate that need for cognition does not predict news consumption on the web, but only need to evaluate positively correlates to news website usage. Also, both variables positively correlate to active sharing and commenting on political information in social media, attention to political news, and political knowledge.

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INTRODUCTION

The internet has emerged as a news source which had been dominated by television and newspapers (Pew Research Center, 2016). News consumers tend to exhibit different patterns of selecting media sources due to increased options and easier access to a multitude of sources. Regarding the shifted media environment, a plethora of studies has explored news consumption behaviors on new media by applying theoretical frameworks such as uses and gratifications (Al-Menayes. 2015; Kaye, & Johnson, 2002; Lin, Salwen & Abdulla, 2005) or selective exposure (Garrett, 2009; Knobloch-Westerwick & Meng, 2009; Stroud, 2008). Although it has been a prevalent topic in communication, there has been a lack of research differentiating two paths to access information on the web: why some people are likely to be active news seekers on news websites and others are likely to be passive news browsers on social media, especially in terms of obtaining political information.

Presumably, need for cognition, a psychological variable related to differences in preferences for complex thinking or simple thinking, could be a factor to predict people's news selections on the web (Winter & Krämer, 2012). Several studies find that need for cognition is positively related to web usage requiring cognitive efforts (Amichai-Hamburger, Kaynar, & Fine, 2007; Kaynar & Amichai-Hamburger, 2008; Tuten, & Bosnjak, 2001) and negatively related to social media use (Zhong, Hardin, & Sun, 2011). Also, need to evaluate, individuals' proclivity to judge whether an issue is good or bad, is known to be a predictor of news usage for political information (Bizer et al. 2004; David, 2011). Further, need for cognition and need to evaluate have the potential to interact with each other, when deciding access points to online political information (Nir, 2011).

Given the importance of the topic, the purpose of this paper is to extend our understanding of digital news usage by checking the influence of need for cognition and need to evaluate. Firstly, I will examine whether need for cognition or need to evaluate are predictors for

seeking out news websites or incidentally encountering newsfeeds from social media. Secondly, I will investigate based on Nir (2011)'s work on motivated reasoning typology, whether need for cognition and need to evaluate interact with each other when predicting use of news websites and social media for news sources.

LITERATURE REVIEW

Previous studies on digital news use

The development of laptops and smart phones enables increased access to a bulk of information on the internet (Pew Research Center, 2016). Nowadays, 84% of American adults use the internet (Pew Research Center, 2015) and about 38% of Americans consume news online (Pew Research Center, 2016). Social media and news websites have become the most popular outlets for online news users (Pew Research Center, 2017), by relaying news more easily and quickly than other sources.

Using digital media for news helps people to become more politically knowledgeable citizens. But, there are also some downsides. It can restrain one to a limited viewpoint, which are called "filter bubbles" (see Pariser, 2011). Also, a different motivational use of the internet leads to unexpected outcomes, such as an increasing gap of political knowledge between people who prefer news or entertainment (Prior, 2005).

Interpreting the patterns of media use on the web has been conducted with diverse theoretical backgrounds. Uses and gratifications theory explains that individuals use media in accordance to their specific needs (Katz, Blumler, & Gurevitch, 1973). The theory appropriately illustrates an individual's motivation to habitually choose different types of media or media content. For example, Lin, Salwen and Abdulla (2005) find that news websites serve entertainment, interpersonal communication, information skimming, and information scanning purposes. Al-Menayes (2015) also examined motives to use social media by cross-sectional survey. The results show that gratifications expected from social media are entertainment and information seeking. Notwithstanding, uses and gratifications has been criticized by its methodological limitations, unsophisticated motives, and a lack of coherence as a theory (Ruggiero, 2000).

Another big branch in research on news consumption is selective exposure. A growing body of literature on selective exposure has explored how news consumers begin to have more control on choosing news information based on their pre-existing beliefs. Festinger's (1957) cognitive dissonance theory explains how the information selection process is followed by predispositions with a cognitive mechanism. The basic assumption of the theory is that people undergo cognitive dissonance when faced with messages which challenge their existing beliefs. Because dissonance is an unpleasant cognitive state, individuals are likely to be exposed to messages backing their predispositions over contradicting their predispositions. Previous literature supports the assumption of selective exposure in the age of countless media outlets. Stroud (2008) investigates the pattern of partisan selective exposure across media types, using data from the 2004 National Annenberg Election Survey and finds that people's politically biased media choices are consistent across political talk radio, cable news, and websites. Other studies have evidence that people use blogs in ways that confirm their party identification (Lawrence, Sides, & Farrell, 2010), and prefer online news sources with pro-attitudinal messages regardless of topics (Knobloch-Westerwick & Meng, 2009).

The selective exposure approach explicates the relationship between new media landscapes and an individual's news consumption based on his or her existing beliefs (Garrett, 2009). However, its scope of media use is relatively limited, because the term selective exposure has been linked to confirmation bias (Knobloch-Westerwick, 2015). Most of studies focus on the mechanism of exposure toward political information or news labels in accordance with political ideologies (Garrett, 2009; Iyengar & Hahn, 2009; Stroud, 2008; Knobloch-Westerwick & Meng, 2009). To sum up, there is a lack of attempts to provide a far-reaching picture of general news media use in previous literature, explaining which

variable leads people to choose a certain type of new media platform as an information source.

Active versus passive news consumption

Individuals show different patterns of news usage on the web, because they cannot consume all of the information available online. Categorizing digital news consumers into active versus passive users has been discussed by a number of scholars with different terms. Tewksbury et al. (2001) identify "incidental exposure," which refers to encountering unexpected news while looking for other information or doing other activities on the internet. This implies that online users can either actively seek information or passively encounter information. Similarly, Erdelez (1999) introduces the notion of "information encountering," which is running into information inadvertently while performing unrelated activities. This is different from information seeking, which denotes the active acquisition of information. Tewksbury, Hals and Bibart (2008) classify online users into information selectors and browsers: information selectors focus on specific topics when searching for information, and information browsers scan a wide range of media issues.

As seen in the previous literature, digital news users can also be divided into active or passive users. Using news websites or social media for political information can be also adapted for this categorization. To illustrate, visiting news websites usually requires active, advertent, and deliberative information seeking procedures. On the contrary, obtaining news on social media involves passive and inadvertent information encountering procedures. Further, the two pathways of news consumption behaviors on the web can be explained by personality traits in order to observe individual differences.

Need for Cognition and the Elaboration Likelihood Model

Several studies propose that social media use and internet use can be a function of personality variables (Amichai-Hamburger et al., 2007; Correa, Hinsley, & De Zuniga, 2010; David, 2011; Hamburger, & Ben-Artzi, 2000). Personality variables are useful when analyzing users' distinct choices with regards to the diversity of internet functions, including social interaction, information seeking, and entertainment (Hamburger, & Ben-Artzi, 2000). Hughes, Rowe, Batey and Lee (2012) suggest that a narrow personality trait, like need for cognition (NFC), can predict online users' information consumption patterns.

Developed by Cacioppo and Petty (1982), need for cognition refers to people's tendency to vary in managing cognitive efforts. To illustrate, individuals with low NFC tend to avoid complex problems and issues requiring cognitive effort. On the other hand, individuals with high NFC are likely to allocate a large amount of cognitive effort to complex issues, discourses, and information. Among a wide array of media types, the internet is the place where we can observe that an individual's different patterns of news consumption are caused by a different level of NFC.

Need for cognition explains why people varying in using the news websites or social media as their news sources. Recent literature focuses on the role of NFC on media use, especially on the web (Amichai-Hamburger et al., 2007). Tuten and Bosnjak's (2001) study shows that NFC is positively related to web usage for current events and news. Zhong et al. (2011) also find that NFC is negatively related to social media use. Specifically, people with high NFC access social media less than people with low NFC. Amichai-Hamburger et al. (2007) test the effect of NFC by randomly assigning web-users into four types of webpages, which differed in the existence of hyper-links and time pressure. They postulate that high NFC would lead to use hyper-links more, because hyper-links are the path to access for more information. Their results support their hypothesis that people with high NFC use more

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hyper-links and stayed longer on the webpage than people with low NFC. Kaynar and Amichai-Hamburger (2008) broaden their previous topic and tested whether NFC is related to usage of professional services (getting information for studies, e-mail for work, real time message for work, etc) or social services (real time debating or chat, real time messaging with friends, etc). They find a significant relationship between NFC and use the web for professional services, though the effected size is not large.

Further, findings in literature dealing with the relationship of NFC and new media usage are aligned with Petty and Cacioppo's (1981) elaboration likelihood model (ELM). ELM explains that there are two pathways of information processing: the central route and the peripheral route. The central route is the informational path requiring motivation and ability to think with effort. People who are less engaged in a lack of a cognitive ability take the peripheral route, relying on emotional cues. People use the peripheral route if information is less personally relevant and motivated (Martin, 2007).

ELM provides a framework for how online news consumers select different pathways of getting political news: actively seeking news websites or passively encountering news on social media. In fact, social media was initially launched as a platform for connecting interpersonally. Though it can serve a role as distributing news, a major motive to use social media is to feel connected to other people and maintain relationships (Ellison, Steinfield, & Lampe, 2007; Pew Research Center, 2011).

Zhong et al. (2011) argue that people low on NFC would select the peripheral route using social media, because they value emotional outcomes such as moods and social relationships rather than cognitively demanding messages. Their findings are consistent with their intuition in that low NFC people tend to access social media more frequently than high NFC people.

On the other hand, news websites are usually run by established news organizations, like *Fox News, CNN,* or *New York Times,* and writers are well-trained, professional journalists. News articles provided in those websites are generally longer and more complicated in usage of their language, so it is natural to say that users who intentionally seek the sites have motives to click hyper-links, read and understand those news stories. As in Amichai-Hamburger et al.'s (2007) findings, people with high NFC are willing to use hyper-links and read long stories. Thus, it is plausible to posit that news website consumers process information via the central route.
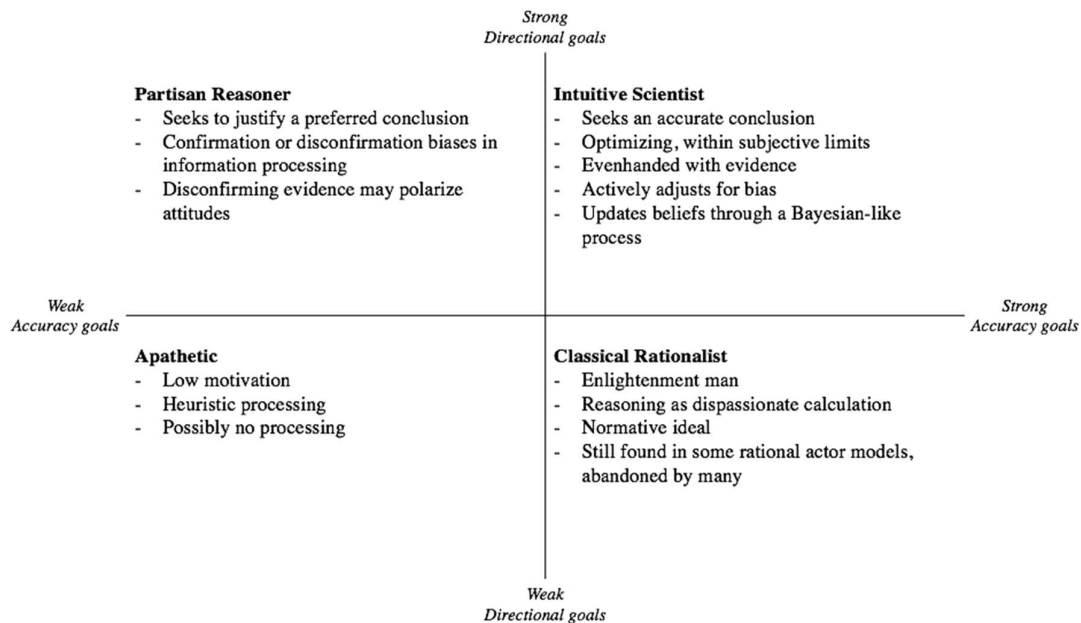
Need for Cognition and Need to Evaluate

Need to evaluate is another psychological variable that can explain individuals' differences in news usage. Need to evaluate (Jarvis & Petty, 1996) is a propensity to assess objects or issues as either good or bad. People with high need to evaluate (NE) are inclined to hold a myriad of evaluations and attitudes towards a number of issues. On the contrary, people with low NE have fewer thoughts and attitudes about evaluating certain issues. Bizer et al. (2004) find that NE predicts behavioral outcomes in the scope of politics: high NE people are more inclined to engage in political participation, turnout, and seek for news media than low NE people.

Need for cognition and need to evaluate may not only separately affect news use, but also work together by labeling people into theoretical categorization. Nir (2011) explicates the role of NFC and NE in the information seeking process, based on Kunda's motivated reasoning theory (1990). Kunda (1990) suggests that motivations are driven by either accuracy goals or directional goals. An accuracy goal is the desire to reach to a precise conclusion about a given issue. People who pursue an accuracy goal allot a large amount of cognitive efforts on reasoning, keenly seek related information, and process information with

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complex deliberations (Kunda, 1990). Otherwise, people with a directional goal have desire to retain their own belief, prefer pro-attitudinal information, and refuse counter-attitudinal information. Nir (2011) proposes that need for cognition is the appropriate operational definition of an accuracy goal, and need to evaluate is the operational definition of a directional goal.

Figure 1. A typology of motivated reasoning

Strong
Directional goals

Partisan Reasoner
- Seeks to justify a preferred conclusion
- Confirmation or disconfirmation biases in information processing
- Disconfirming evidence may polarize attitudes

Intuitive Scientist
- Seeks an accurate conclusion
- Optimizing, within subjective limits
- Evenhanded with evidence
- Actively adjusts for bias
- Updates beliefs through a Bayesian-like process

Weak
Accuracy goals

Strong
Accuracy goals

Apathetic
- Low motivation
- Heuristic processing
- Possibly no processing

Classical Rationalist
- Enlightenment man
- Reasoning as dispassionate calculation
- Normative ideal
- Still found in some rational actor models, abandoned by many

Weak
Directional goals

SOURCE.—Adapted from Lodge and Taber (2000, 187).

According to Nir (2011), differences of NFC or NE sort individuals into the categories of motivated reasoning manifested by their specific goals. Initially introduced by Lodge and Taber (2000), the fourfold typology of motivated reasoning and political evaluation classifies people into the observable groups. It includes four types of reasoning, with two goals (directional, accuracy) and their strengths (weak, strong) (see Figure 1). Lodge and Taber (2000) explains by grouping them as partisan reasoner (strong direction, weak accuracy goals), intuitive scientist (strong direction, strong accuracy), classical rationalist (weak direction, strong accuracy), and apathetic (weak direction, weak accuracy). Nir (2011) suggests that "this typology proposes operational definitions of accuracy and

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directional goals" (p.506). Testing this typology is worth enough to speculate whether NFC and NE is functioning together on the current topic.

The purpose of this article is to contribute to the understanding of news consumption behavior on the web. Inspired by previous literature and elaboration likelihood model, this paper posits that need for cognition explains individual differences to get to two pathways, active or passive digital news consumption. Individuals may be motivated to deliberately visit news websites if their NFC is high. On the other hand, low NFC may lead people to use social media for news source without strong intentions. This paper also develops predictions based on Nir (2011)'s typology on NFC and NE. Individuals' differences in need for cognition and need to evaluate may manifest news consumption behavior on the web.

Hypothesis

This study focuses on political news usage through news websites or social media, which has not been investigated thoroughly applying the ELM framework in previous literature. Generally, news websites are professional and informational in delivering political news in that they allocate most part of their pages for political updates in the U.S. Social media is consisted of diverse kinds of information, from interpersonal materials (e.g. daily life of family or friends), public culture (e.g. comments on TV show or pop star's recent events) to political materials. The amount of political information on news websites is larger than social media. More importantly, if high NFC people tend to select news websites, they may have more motivations to comprehend and remember information provided by journalists (i.e. central route). Otherwise, if low NFC people choose social media, they may not allot enough cognitive recourses to understand information on timeline (i.e. peripheral route). Thus, the hypotheses are:

Hypothesis 1: People high on NFC seek political news from news websites than people low on NFC.

Hypothesis 2: People low on NFC encounter political news from social media sites than people high on NFC.

Commenting, sharing, and liking are the ways of creating contents and participating in issues on social media. These activities on social media, which are often collectively called as social engagement, has been explored in literature on marketing related to customer engagement with a brand (Hollebeek, 2011). However, social engagement should not only be limited to marketing, but also apply to news use. Moreover, those activities are different from general social media use in that active participation involves more efforts and attentions to the issue. Social engagement with news, especially on social media, has a potential to be associated with NFC or NE. High NFC people invest more cognitive efforts on relevant information more than low NFC people. Also, it is known that people high on NE like to engage in evaluative thoughts and seek issue-relevant information. Thus, both NFC and NE are possibly related to social engagement on social media.

Hypothesis 3: High NFC people will participate in social engagement on social media than low NFC people

Hypothesis 4: High NE people will participate in more social engagement on social media than low NE people.

Additionally, attention to political news and political knowledge are likely to be related need for cognition. Because high NFC involves more thinking and cognitive effort, it is natural to posit that people high on NFC pay more attention to information and obtain more information than people low on NFC.

Hypothesis 5: High NFC people will pay more attention to political news than low NFC people.

Hypothesis 6: High NFC people will have higher political knowledge than low NFC people.

The main hypothesis in this paper proposes that NFC and NE would independently predict active or passive news consumption behavior on the web. However, it is possible two variables interact each other, as Nir's (2011) approach on the typology of motivated reasoning. The typology provides operations by distinguishing into four groups differ in NFC and NE. Lodge and Taber (2010) suggest that strongly pursuing a goal will result in active gathering of evidence. To be specific, intuitive scientists (strong direction, strong accuracy) look for sound evidence to reach to fair conclusion and classical rationalists (weak direction, strong accuracy) also seek for information without preferences. Apathetic (weak direction, weak accuracy) have low motivations on both accuracy and directions, so they process information heuristically. Likewise, the explanations of Lodge and Taber (2010) match well when explaining active or passive news consumers on the web. However, it is difficult to postulate digital news consumption behaviors of partisan reasoners because they are assumed to have high need to evaluate but low need for cognition. They may prefer to stay in their filter bubbles on social media by blocking or muting disconfirmed opinions, or it is also possible that their strong motives to evaluate may lead them to visit news websites with preferred conclusions (e.g. Bizer et al., 2004) despite of their low need for cognition. Thus, hypothesis about motivated reasoning as following:

Hypothesis 7a: Intuitive scientists and classical rationalists will seek political news on news websites than Apathetic.

Hypothesis 7b: Apathetic will encounter political news on social media than intuitive scientists and classical rationalists.

Research question 1: Which online media are partisan reasoners likely to use for getting political news?

Finally, different media use patterns may result in diverged perceptions which is an important issue in American society. Initially introduced by McCombs and Shaw (1972), the agenda setting approach argues that news media performs a role as agenda setter, who emphasize or marginalize certain issues. Following this logic, choosing different media platforms and the number of media use can lead to varied opinions what is a crucial issue in the U.S. Thus, another hypothesis arises from this idea:

Hypothesis 8: Individuals' perceived issue importance will differ by their amount of news use on news websites and social media.

METHOD

The present study uses online survey with 200 undergraduates recruited from the large Midwestern university. 199 students completed the survey, 75 males (37.7%) and 124 females (62.3%). The respondents' ages ranged from 18-38, with a mean of 20 years. The majority of respondents were Caucasian (77.4%), followed by Asian (8.5%), African American (8%), Hispanic (3.5%), and others (2.5%).

Measurement

Media use. Participants were asked how many times they use TV, newspaper, radio news, news websites, social media to get information about events, public issues and politics with seven-point Likert scale (1- Everyday; 7- never). A new measure of social media use is created based on the scales' median split. The item consists of two categories: (1) light social media users (2) heavy social media users.

Social engagement on social media. To delineate individual's social media use, detailed items were included in order to measure respondents' social media activities related to political news. Referring to Pew Research Center (2016), the frequency of behaviors such as commenting on political news stories, "liking" political news stories were asked. Scores were ranged from 1 (Never) to 5 (Every day or almost every day). Questions are (1) Read political news headlines or short news summaries. (2) Click a link to other websites and read a political news story. (3) Read other users' comments on political news stories. (4) Comment on political news stories (5) Look at a political photo, video, gif, etc. (6) "Like" political news stories (7) Post links to political news stories by myself (8) Discuss issues in the political news on the timeline. The reliability of the additive score is $\alpha = .82$.

Need for Cognition. The variable was measured with six items from Lee & Jang (2010). Participants were asked to answer how whether or not the statement in each item is characteristic of them or what they believe, in seven-point Likert scale (1- doesn't describe me at all; 7- describes me very well). The reliability of the additive scale is $\alpha = .76$.

Need to Evaluate. The five-point scale of need to evaluate developed by Jarvis & Petty (1994) was used. Respondents answered how much they agree with each statement (e.g. I form opinion about everything), according to their beliefs and experiences (1-extremley uncharacteristic; 5- extremely characteristic). The reliability of the additive scale is $\alpha = .67$.

Motivated reasoning typology. A new variable was computed based on the NFC and NE scales' median splits. It values correspond to the four motivated-reasoning quadrants: (1) low NFC, low NE, ''apathetic''; (2) low NFC, high NE, ''partisan reasoner''; (3) high NFC, low NE, ''classical rationalist''; and (4) high NFC, high NE, ''intuitive scientist.''

Issue importance. According to agenda setting theory, news media are likely to affect individuals' perception toward issues in the society by delivering information which issue is important or not. Issue importance was measured in order to find discrepancy by different media use patterns. Following Gallup's (2014) question, it was open-ended question asking "what is the most important problem facing the U.S.?" Issues are recoded into eight categories (1) Political issues including election, presidency, and polarization. (2) Environment. (3) Economics including tax, unemployment, and poverty. (4) Social inequality including discriminations and minorities. (5) Terrorism and immigration. (6) Obama care. (7) Crime issues including gun control. (8) Health issues like diets and diseases.

Attention. How much attention respondents have paid to news about politics were asked (Price & Zaller, 1993), and answers ranged from a 1 (great deal) to 5 (none).

Political knowledge. Carpini and Keeter (1993)'s political knowledge index was used in order to measure political knowledge. The variable is measured by six questions. Two questions are open-ended questions: (1) Do you happen to know what job or political office is now held by Paul Ryan? (2) How much of a majority is required for the U.S. Senate and House to override a presidential veto? Other questions are multiple choices: (3) Whose responsibility is it to determine if a law is constitutional or not? Is it the president, the Congress, or the Supreme Court? (1- the president, 2- the congress, 3- the Supreme Court) (4) Do you happen to know which party had the most members in the House of Representatives in Washington before the upcoming election? (1-the Republican Party, 2- the Democratic Party) (5) Do you happen to know which party had the most members in the House of Representatives in Washington before the upcoming election? (1-the Republican Party, 2- the Democratic Party) (6) Would you say that one of the parties is more conservative than the other at the national level? Which party is more conservative? (1-the Republican Party, 2- the Democratic Party). The fifth question asking knowledge about election results is dropped because of its low reliability. The reliability of the combined scale is $\alpha = .62$.

The descriptive data of social media and news websites use are presented in the

Table 1. For the frequency of social media use, 64.3% of respondents said that they visit

social media every day to get political information, followed by more than a week (17.6%),

from once a week to less than once a month (13.5%), and non-users (3.5%). Additionally,

50.8% of respondents indicated that they visit *Facebook* most frequently, followed by *Twitter*

(33.7%), *Snapchat* (5%), *Instagram* (4.5%), *Pinterest* (1%), and others (3.5%).

Table 1. Social media and news websites use

Frequency	Social media use		News websites use	
	N	Percentage	N	Percentage
Never	7	3.5	11	5.5
Less than once a month	6	3.0	12	6.0
Once a month	6	3.0	14	7.0
More than once a month	9	4.5	18	9.0
Once a week	6	3.0	36	18.1
More than once a week	35	17.6	49	24.6
Every day	128	64.3	59	29.6
Missing	2	1.1	0	0
Total	199	100	199	100

The frequency of using news websites for political news show a different pattern that

participants do not use news website habitually as social media. First of all, 29.6% of

respondents indicated that they use news websites everyday as a political news source,

followed by more than a week (24.6%), once a week (18.1%), more than once a month (9%),

once a month (7%), less than once a month (6%) and never (5.5%). Also, *CNN* (41.7%) was

the most popular news website among respondents.

Table 2. Need for cognition, need to evaluate, and news use

	Social media use	News websites use	Social engagement	Attention	Political knowledge
Need for cognition	.05	.004	.15*	.20*	.34*
Need to evaluate	.01	.20*	.32*	.39*	.22*

The general expectation of this study is that need for cognition is a potential

contributory factor for digital news media usage. In order to test the hypothesis, the

correlation between media use and NFC was estimated. Table 2 shows the results of

correlations between variables. H1 states that people with people high on NFC use news

websites to get political news on the internet. However, H1 is not supported. NFC is not

significantly related to news websites use, $r = - .02, p > .05$. Also, H2 predicts that low NFC

people tend to get political news from social media rather than official news websites

voluntarily. The second hypothesis is rejected, the relationship between NFC and social

media use is not significant, $r = - .05, p > .05$. Results indicate that need to evaluate, not need

for cognition, is significantly related to news website use. People with high NE are likely to

visit news websites for political news than people with low NE, $r = .20, p < .05$.

H3 and H4 propose that need for cognition and need to evaluate would predict

engagement on social media, regards to political news. Both hypotheses are supported. Social

engagement on social media is positively related to NFC, $r = .15, p = < .05$. Also, NE is

significantly correlated with social engagement, $r = .32, p < .05$.

H5 suggests that need for cognition is positively related to attention to political news.

H5 is supported that NFC is positively related with attention to political news, $r = .20, p =$

< .05. Additionally, NE is positively related to attention to political news, $r= .39, p < .05$. H6

indicates that need for cognition positively correlates to political knowledge. H6 is supported,

because NFC is positively related to political knowledge, $r= .23, p < .05$. Also, need to

evaluate is marginally related to political knowledge, $r= .17, p < .05$.

Table 3. Need for cognition, need to evaluate, and news use on social media.

	Low NE		High NE	
	Low NFC (*n*= 53)	High NFC (*n*= 34)	Low NFC (*n*= 37)	High NFC (*n*= 55)
Light user	28.3%	44.1%	43.2%	32.7%
Heavy user	71.7%	55.9%	56.8%	67.3%
Total	100%	100%	100%	100%

Note: (χ^2 (1, *N*= 86) =-.13, *p*>0.05, *V*= .13) —low NE condition, (χ^2 (1, *N*= 92) =.11, *p*>0.05, *V*= .11) — high NE condition.

Table 4. Need for cognition, need to evaluate, and news use on news websites

	Low NE		High NE	
	Low NFC (*n*= 38)	High NFC (*n*= 55)	Low NFC (*n*=53)	High NFC (*n*=35)
Light user	44.7%	50.9%	43.4%	37.1%
Heavy user	55.3%	49.1%	56.6%	62.9%
Total	100%	100%	100%	100%

Note: (χ^2 (1, *N*= 93) =-.06, *p*>0.05, *V*= .06). ow NE condition, (χ^2 (1, *N*= 88) =.06, *p*>0.05, *V*= .06) — high NE condition.

  The hypothesis 7a, 7b and the first research question concerns whether the data fits

with the typology of motivated reasoning (see Table 3 and 4). However, results showed that

need for cognition and need to evaluate do not interact each other. Individuals' social media

usage shows no significant difference by four groups: partisan reasoner, intuitive scientist,

classical rationalist and apathetic on low need to evaluate condition (χ^2 (1, N= 86) =-.16, p>0.05, V= .16) and high need to evaluate condition (χ^2 (1, N= 92) =.11, p>0.05, V= .11). Also, the fourfold groups do not have any significant differences in visiting news websites on high need to evaluate condition (χ^2 (1, N= 88) =.06, p>0.05, V= .06) and low need to evaluate condition (χ^2 (1, N= 93) =-.06, p>0.05, V= .06).

Table 5. Social media and issue importance

Issues	Social media use		
	Non-users (*n*=7)	Moderate users (*n*=21)	Heavy users (*n*=169)
Political issues	42.9%	33.3%	26.0%
Environment	0%	4.8%	9.5%
Economics	28.6%	28.6%	26.6%
Social inequality	28.5%	4.8%	22.5%
Terrorism/immigration	0%	4.8%	10%
Obama care	0%	4.7%	0%
Crime issues	0%	0%	1.2%
Health issues	0%	0%	1.2%
Others	0%	19.0%	3.0%
Total	100%	100%	100%

Note: (χ^2 (16, N= 197) =26.36, p<0.05, V= .26).

Finally, the H8 inquiries that difference in the amount of media use contribute to different issue importance. The results of the chi-square test indicate that difference in issue importance of media use is only found in social media use (see Table 5). Regarding social media use, heavy users (more than once a week), moderate users (less than once a week), and non-users (never), show differences in their perceived important topic in America (χ^2 (16, N= 197) =26.36, p<0.05, V= .26). A closer inspection of the frequencies show that most non-users ranked politics, including 2017 election, partisanship, or international politics as the most important issue facing the U.S. (42.9%). Moderate users point out that politics as the most paramount problem (33.3%) and economy as the second important (28.6%). Otherwise,

heavy users' opinions were dispersed to politics (26%), social inequality like racial and

sexual discrimination (22.5%) and economy like national debt or unemployment (26.6%).

DISCUSSION

As previous literature finds that need for cognition predicts web usage as an information tool, this paper also tests the relationship between digital news consumption, need for cognition, and need to evaluate. The results contradicted the main prediction which states that people high on NFC would seek out news websites whereas people low on NFC would encounter political news from social media, though we do find other significant relationships. To illustrate, NFC is positively related to social engagement on social media, attention, and political knowledge as expected but does not predict news consumption on news websites and social media. In the following section, I will discuss several intriguing aspects of the mixed results.

The first interesting finding is that neither need for cognition or need to evaluate are significantly associated to general social media use. This challenges findings of previous literature (e.g. Zhong et al., 2011). It is possible there may be an unknown moderating variable in this relationship, like interest in politics. For example, David's (2011) study shows that NFC and NE are positively associated to interest to politics, and interest predicts exposure to news media. Future studies should expound on finding an accurate relationship of digital news consumption behaviors by figuring out an appropriate moderator. Also, the impact of NFC may differ by social media platforms. For example, in the study of Hughes et al. (2012), need for cognition positively correlates to using *Twitter* for information and negatively correlates to using *Facebook* for information. They suggest the online information behaviors may not derive from one personality variable, and they can be dissimilar in accords to types of social media. Thus, future research should take into account characteristics of different social media platforms and specify online information behaviors.

Secondly, the fourfold framework of need for cognition and need to evaluate by Nir (2011) is discrepant with the results in this study. Using online media as a political

information source does not follow a complicated typology of four groups. In fact, NFC and NE are separately working with news websites usage and social engagement. Only need to evaluate predicts news websites use, and NE is a stronger indicator of social engagement than NFC. Based on the findings, need to evaluate may be more accurate to explain news use on the web (e.g. Bizer et al., 2004) than NFC. Additionally, borrowing the traditional twofold explanation by Kunda (1990), it is plausible that digital news use is more strongly driven by directional goals, not by accuracy goals. This also means that the motivation of news consumption online is driven by making judgments about certain issues and being evaluative, rather than obtaining accurate information.

Finally, political knowledge positively correlates with need for cognition and need to evaluate. NFC and NE explains why people have different levels of political knowledge in a part. Knowledgeable citizens have propositions to access to more information with cognitive efforts and like to make a judgment about it. The results also indicate that a gap of political knowledge can be related to individuals' motivational difference—in this paper, it is difference in need for cognition and need to evaluate— as in Prior (2009). However, the reliability of political knowledge scale is not high enough to strengthen the results. Future studies may speculate into the influence of this knowledge gap, such as political participation or out-group bias and ensure to create a scale with high reliability.

Several methodological limitations of this study may add explanation to the failure to support H1 and H2. Firstly, samples of the study did not reflect the general population in America. Respondents were college students in the large Midwestern university for extra credits. As it is known that NFC is positively associated with education, it is plausible that the variation of NFC was not large enough to see any difference in the postulated relationship. Also, undergraduates are generally heavy social media users. In fact, 64.3% of

respondents answered in the survey that they use social media every day. Thus, this bias in sample may work against detecting a significant relationship.

Secondly, the 2017 presidential election was conducted during the survey session. A certain pattern of media consumption behavior can persist during the election term and can disappear after the event (Stroud, 2008). In order to measure a general media use, future studies need to be conducted during non-election seasons.

Third, self-reports have some limitations when measuring exposure to information in that media users are not often fully aware of their own selection motives (Knobloch-Westerwick, 2015) and overrate their news exposure following a desirability to look good or finish a survey quickly (Prior, 2009). Thus, an innate drawback in the methodology of surveys may partly vitiate to observe the effects of NFC and NE.

Finally, it is possible that individuals have different interpretations of the term "news websites." In fact, a small number of people in the survey answered *Facebook* or *Google* when asking which news websites they are likely to visit. A few people also indicated both news websites and social media sites, like *Twitter* and *CNN*, about the same question. This shows that they do not have clear distinction between news websites and social media and consider social media a kind of news website. In this sense, future studies should clarify survey questions when asking about media use.

CONCLUSION

The current paper has several contributions on individuals' news consumption behaviors on the web. Firstly, it finds that need for cognition and need to evaluate are predictors of digital news use. The hypothesis that NFC will predict news websites and social media for political news is rejected, but results indicate that NE is positively associated to news website use. This implies that individual differences in evaluating may be a stronger motivation to seeking information actively regarding political information on the web.

Secondly, there is a paucity of studies discriminating pathways to obtain news on the internet. Most studies focus on the news websites and social media separately, not trying to distinguish them. The current paper extends the research on news use by categorizing two pathways using NFC and NE. As NFC and NE are significantly correlated to social engagement on social media, this paper finds that they are appropriate variables to predict news consumption on the web.

Ease of access to news online alters the ways we consume news. Some people are eager to be informed and are willing to seek more information, whereas others are rather passive in getting news. The current study finds that NFC and NE have the potential to explain individual differences in digital news usage. Future research should capitalize on this categorization and may find other potential variables that elaborate the active and passive news consumption behaviors on the web. Mapping the information seeking process in a more detailed way is pivotal for explicating the impact of different selections of online news to readers' perceptions, knowledge, attitudes and political behaviors.

APPENDIX

You are being asked to participate a research study of media use patterns. In this online survey, you will be asked to answer several questions identifying your media use habits and other personal experience. Please answer sincerely, based on your personal identifications and experience. I guarantee that your answers will be protected and not be used in any purposes except for the study. The anonymity of your responses will be ensured. Also, your answers to these questions will only be accessible to the researchers of the study.

You must be at least 18 years old to participate in this research. Participation in this research project is completely voluntary. You have the right to say no. You may change your mind at any time and withdraw. You may choose not to answer specific questions or to stop participating at any time. Whether you choose to participate or not will have no effect on your grade or evaluation. You will be compensated by extra credits for participating this research.

If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish, Heysung Lee, a graduate student in the department of Communication at Michigan State University, leeheysu@msu.edu.

They survey will take around XX minutes. Please click the following button, to start the survey.

By clicking on the button below, you indicate your voluntary agreement to participate in this online survey.

Now, we want to ask you about your media use habits. Please answer sincerely based on your daily life and personal experience.

1. How often do you watch TV to get information about events, public issues and politics? (Zuniga, Jung & Valenzuela, 2012)
   (1) Every day
   (2) More than once a week
   (3) Once a week
   (4) More than once a month
   (5) Once a month
   (6) Less than once a month
   (7) Never

2. How often do you read newspaper to get information about events, public issues and politics?
   1) Every day
   2) More than once a week
   3) Once a week
   4) More than once a month
   5) Once a month
   6) Less than once a month
   7) Never

3. How often do you listen to radio news to get information about events, public issues and politics?
   1) Every day
   2) More than once a week
   3) Once a week
   4) More than once a month
   5) Once a month
   6) Less than once a month
   7) Never

4. How often do you visit online news websites to get information about events, public issues and politics?
   1) Every day
   2) More than once a week
   3) Once a week
   4) More than once a month
   5) Once a month
   6) Less than once a month
   7) Never

5. What is the name of online news websites that you most frequently to visit to get information about events, public issues and politics? (open-ended question)

6. How often do you visit social network sites to get information about events, public issues and politics?
   1) Every day

2) More than once a week
3) Once a week
4) More than once a month
5) Once a month
6) Less than once a month
7) Never

7. What is the name of social network sites that you most frequently to visit to get information about events, public issues and politics?
(1) Facebook
(2) Twitter
(3) Instagram
(4) Snapchat
(5) Pinterest
(6) Others (Please Specify; open-ended question)

In your use of social network sites, how often have you done each of the following behavior? (*Ask only if a respondent answer more than 6 in question 'SNS') (Pew Research Center, 2016)

(1) Never
(2) Rarely
(3) Several times a month
(4) Several times a week
(5) Every day or almost every day

8. Read political news headlines or short news summaries.
9. Click a link to other websites and read a political news story
10. Read other users' comments on political news stories.
11. Comment on political news stories
12. Look at a political photo, video, gif, etc.
13. "Like" political news stories
14. Post links to political news stories by myself
15. Discuss issues in the political news on the timeline

16. How much attention did you pay to news about politics- a great deal, quite a bit, some, very little, or none? (Price & Zaller, 1993)
1) A great deal
2) Quite a bit
3) Some
4) Very little
5) none

Now, we like to ask you about how you form opinions about issues. For each of the statements below, please indicate whether or not the statement is characteristic of you or what you believe (1-doesn't describe me at all; 7- describes me very well). (Randomized)

17. I would prefer complex to simple problems

18. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities (reverse-coded)

19. I like to have the responsibility of handling a situation that requires a lot of thinking

20. I try to anticipate and avoid situations where there is likely chance I will have to think in depth about something (reverse-coded)

21. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought

22. I feel relief rather than satisfaction after completing a task that required a lot of mental effort (reverse-coded).

Also, please answer what you think about yourself.
Read each of the following statements and decide how much you agree with each according to your beliefs and experiences. Please respond according to the following scale. (five-point scale: 1= extremely uncharacteristic, 2=somewhat uncharacteristic, 3= uncertain, 4= somewhat characteristic, 5= extremely characteristic)

23. I form opinions about everything
24. It is very important to me hold strong opinions
25. I often prefer to remain neutral about complex issues (reverse-coded)
26. I have many more opinions than the average person

Now, you will be asked to answer general questions about the U.S.

27. What is the most important problem facing the U.S? Please rate top 3 problems. (open-ended question) (Gallup, 2014)
28. Do you happen to know what job or political office is now held by Paul Ryan?
29. Whose responsibility is it to determine if a law is constitutional or not? Is it the president, the Congress, or the Supreme Court?
30. How much of a majority is required for the U.S. Senate and House to override a presidential veto?
31. Do you happen to know which party had the most members in the House of Representatives in Washington before the upcoming election?
32. Would you say that one of the parties is more conservative than the other at the national level? Which party is more conservative?

Finally, you are asked to identify basic information about you.

33. What is your age? (open-ended question)
34. What is your gender?
 1) Male
 2) Female
 3) Others
35. What is your race?
 1) Caucasian
 2) African American
 3) Asian
 4) Hispanic
 5) Others (Please specify)

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